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## IPD Newsletter

July-December 2017

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**Argentina, Belgium, Canada, China, France, Indonesia, Japan, Kazakhstan, Pakistan, Russia, and an IPD-hosted Webinar**

**COVER PHOTO:** *NRCS National Soil Survey Center Agronomist Mike Kucera (right) provides instruction during a Water Evaluation, Testing, and Treatment Workshop, August 23, 2017, at Pakistan's National Agricultural Research Centre in Islamabad. During field training, the participants assessed risks to ground and surface water quality, such as loss of nutrients. **SEE ENTRY ON PAGE 11.***  
*Photo courtesy of International Center for Agricultural Research in the Dry Areas*

The IPD Newsletter is a biannual publication produced by the International Programs Division of the Natural Resources Conservation Service (NRCS).

The document provides a six-month overview of NRCS participation in international activities, which included providing technical assistance and exchanging scientific and technical information.

Submit articles, photos, and comments to the newsletter point of contact: Sascha Dixon [sascha.dixon@wdc.usda.gov](mailto:sascha.dixon@wdc.usda.gov)

#### IPD Newsletter

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## COSTA RICA

### *Training In Precision Agriculture Improves Soil Fertility*

Researchers at Costa Rica's Earth University acquired new skills in geophysics to enhance crop productivity in the tropics. NRCS New Jersey **Assistant State Soil Scientist Edwin Muñiz** accepted an invitation from Earth University and traveled to the Earth-La Flor campus in the Guanacaste province to perform a technology transfer, September 24-29, 2017. The international research institution, established in 1986 with the support of the U.S. Agency for International Development, the W.K. Kellogg Foundation, and the Costa Rican government, offers degrees in agricultural sciences and natural resource management, as well as agribusiness innovation.

Muñiz agreed to provide training at the Center for Precision Agriculture on collecting and analyzing data with electromagnetic induction (EMI) equipment. EMI, like ground penetrating radar, is a geophysical technology that allows surveyors to acquire data from subsurface investigations. For a soil scientist, measuring the electromagnetic conductivity of soils provides valuable information on soil health and how to develop an appropriate nutrient management strategy. "The goal is to generate a map based on the apparent electrical conductivity to help in the application of fertilizer at a correct rate to avoid over or under application," explained Muñiz.

The majority of soils in Costa Rica, about 41 percent, are Ultisols, meaning they are rich in clay and have a higher capacity to hold moisture. Too much moisture can be a problem for soil management, especially considering the amount

of precipitation in tropical climates. The training was conducted in the province of Guanacaste with a tropical dry climate in the Pacific side and dominated by Ultisols (19%), Alfisols (19%), and Entisols (18%). With access to additional scientific data, conservationists can better determine what nutrients are lacking or need to be reduced to achieve optimal balance.

Muñiz provided seven scientists with classroom and field instruction on EMI theory, data collection and interpretation, and introduced equipment from a U.S. manufacturer that was suitable for the terrain. "The dry tropic zone of Guanacaste, Costa Rica was optimal for the use of EMI as the equipment selected was non-invasive, multi-frequency, and portable, which was easy to use and maneuver in the topography," said Muñiz.

During field work, the researchers were able to observe the performance of the equipment by searching for metal objects buried at known depths and also after altering the soil condition by adding a high salt content solution. "The objective of the test was to simulate different conditions and the responses on different equipment settings in order to generate an equipment setting protocol. In addition, we had the opportunity to test data processing and interpretation of the results using known targets," explained Muñiz.

The data collected can be used to produce apparent electrical conductivity maps. Science-based information that can help plan application rates of fertilizers and





*Researchers familiarize themselves with electromagnetic induction equipment and test performance on a mango plantation, September 26, 2017, at Earth University's Earth-La- Flor campus in Costa Rica.*

*Photo by Edwin Muñiz, USDA NRCS*

pesticides, or influence overall crop selection based on the nutrient concentrations and tolerance levels. Ultimately, the technology allows scientists to provide nutrient management recommendations to farmers and producers.

Researchers at Earth University plan on integrating EMI theory further into their conservation toolkit. Plans are underway to develop a user-friendly method for interpretation and application for farmers interested in adopting the technology. At the same time, the university-operated farm will likely benefit from the additional knowledge in precision farming to improve their productivity.

Shoppers of a particular U.S. food grocer may recognize the “Universidad EARTH” logo on bananas or coffee.

As for Muñiz, the training activity provided NRCS the opportunity to gain additional experience and international exposure in the application of precision agriculture in a unique environment. According to Muñiz, “the focus of utilizing geophysical equipment in New Jersey is more in soil condition, such as measuring soil compaction, depth to bedrock and seasonal water tables.” He adds, “one of the most enriching experiences, in addition to working with professionals from Central America and developing a training

session customized to their needs, was the application of precision agriculture in tropical crops and utility in tropical soils.”

**Edwin Muñiz contributed to this article.**



## EMPLOYEE SPOTLIGHT

### *Interview with Jon Fripp: NRCS Civil Engineer Talks International Conservation*

**T**he Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture (USDA) regularly receives requests to provide technical assistance throughout the world. These capacity building activities address a variety of conservation challenges, such as increasing crop yields, improving water quality, reducing soil erosion, strengthening flood prevention, and reducing post-harvest loss, among others.

The International Programs Division (IPD) of NRCS works with interagency and development partners to determine required expertise for a particular activity, assist with identifying suitable candidates, and provides additional services to facilitate international travel.

Employees interested in international assignments or meetings with visiting foreign delegations can register in the Candidate Database (see [National Bulletin 280-18-1](#)).

NRCS **Civil Engineer Jon Fripp**, from the National Design, Construction, and Soil Mechanics Center in Ft. Worth, Texas, has provided technical assistance in several countries on official government business or as a volunteer with NGOs. His enthusiasm to help people address conservation challenges and willingness to travel have provided him the opportunity to work in several environments. Fripp's vita includes projects in Afghanistan, Belize, Bolivia, Georgia, Pakistan, Qatar, Turkey, and many more. He recently shared some of his experiences in an interview with IPD.

#### **Do you recall your first international assignment and your initial impression?**

My first international assignment was with the U.S. Army Corps of Engineers, almost two decades ago. It was for disaster relief work in Central America. It was intimidating. However, I was on a team with good, experienced people who freely shared their expertise, perspective, and their ethic.

#### **Since then, you've joined NRCS and have had additional opportunities to work internationally. From 2004-2011, you went on several trips to Afghanistan to provide technical assistance. What motivated you to participate in the reconstruction efforts?**

Peace depends upon prosperity and prosperity depends upon agriculture. Reliable agricultural production relies on the adequate use, management, and conservation of soil and water. Improvements in soil and water management technologies have significant potential for improving production, prosperity of farmers and peace for the region. I believe that since I have skills that can be useful to work towards this goal; I should offer to serve. This is also where I met **Otto Gonzalez**, who has been of particular import to my professional development. Otto was with the Foreign Agricultural Service and I had the pleasure of working closely with him since 2004 on many overseas trips to Afghanistan and Pakistan. I have used what I have learned from him in both my work and volunteer activities. His guidance and advice has not only made me a better engineer and civil servant but also a better person. *[Otto Gonzales is now the Director of the Center for International Programs of the National Institute of Food and Agriculture]*



**NRCS Civil Engineer Jon Fripp, has been with NRCS since 2000 and has more than 25 years of federal service. He holds a Bachelor of Science and Master of Science in Civil Engineering and is professionally registered in Virginia.**



*Technical assistance activities in Pakistan. **LEFT:** Fripp discussing soil infiltration and properties with a local farmer.*

*Photo by Cheryl Simmons*

***RIGHT:** Fripp training workshop participants on the use of a multimeter to test electrical components of a solar powered irrigation system.*

*Photo courtesy of International Center for Agricultural Research in the Dry Areas*

**Throughout the USA, NRCS provides conservation technical assistance to address a variety of challenges. How useful are these for application internationally?**

The conservation work done by the NRCS is very applicable to assistance in the developing world. Not only is our technology very applicable but the way we do business—people to people—is very appropriate. Our conservation mission trains us to look for ways to protect, improve, and better the land, which helps people. Take care of the land and it takes care of us. That ethic of helping people help the land is a critical element to success. The engineering and technical tools we use to achieve this goal are great and very important. But it is our ethic: to paraphrase our motto, ‘It is doing right and feeding people’ that is critical. The tools are just the details that get us there.

**Subsistence farming is widespread throughout the developing world. Can you site an example of how you are providing assistance to help smallholder farmers improve their production?**

If I were to point to one of the simple but powerful technologies that I believe that, I have had a hand in promoting; it would be

Drip Bucket Irrigation. Coupled with improvements in soil health and raised bed production, this simple and low tech but powerful irrigation tool allows low resource farmers to improve their health and livelihood. The developing world is using American technology to improve their production and truly follows the USDA motto of ‘Do right and feed everyone’.

**Across the USA, NRCS staff often face skepticism from farmers when introducing unfamiliar conservation practices, such as no-till or cover crops. How receptive are farmers in foreign countries to these and other science-based recommendations?**

Any new technology can be viewed with skepticism. Many small farmers in developing areas have no resources to fall back on and the social safety net is nearly nonexistent. A crop failure can mean disaster to them, their families and their communities. So for the farmer in the developing world to try something new, he or she will need a great deal of bravery. If one is providing aid, they must be clear about the risks as well as the benefits. Often incremental improvements are better than major changes.

**Communication is important for any knowledge transfer, as is connecting with your audience. How difficult is it to interact and exchange information with a non-English speaking audience or with varying levels of English familiarity?**

I usually work with interpreters. For the most part, I find it productive and fun. It is important to talk with them ahead of time and check that they understand technical words that one might want to use. The exchange is a two-way street. Ask for suggestions that they might have to better phrase a topic or issue. It is also important to limit jokes, cultural references, and slang that might not translate appropriately. However, I think approaching any work with a light heart is good. One should try to use some words in the local language and make fun of oneself. People the world over like to laugh.

**On that note of communication, you have taught many workshops in foreign countries. Do you have any recommendations to assist with the learning experience?**

It is important to include hands-on activities in any training. This not only is fun for the participant but it helps you assess if what you are saying, or what is understood



through translation, is being followed sufficiently. Finally, watch people. Often body language of participants in class can indicate if things are being well received.

**Providing technical assistance in a developing country can be very difficult as challenges can be further compounded by the effects of failing infrastructure, an inefficient value chain, or lack of resources. Can you provide an example that demonstrates the linkages or interdependencies that you had to consider?**

In a trip that I conducted as a volunteer, we were working in a Central American slum on a water development project. We found that every tap was contaminated with fecal coliform bacteria. We also discovered that a well-meaning NGO was about to provide infant formula and infant cereal to the population. Since all of the food was delivered in powdered form, it would have to be reconstituted with the contaminated water. This could have been disastrous to babies and small children. Fortunately, we were able to intervene and implement suitable disinfection efforts before a disaster occurred. This lesson of thinking about all the 'ways things can go wrong' is a lesson that I repeat in some of the classes that I teach.

**When on assignment, are you typically the sole consultant or technical expert for the project or is it more collaborative in nature?**

Nothing we do is in a vacuum. Our conservation work in the United States is collaborative in nature and it is the same with any aid work. We have the capacity to accomplish a great deal when we utilize the diverse expertise that is readily available to us through the many people who are available in our conservation family. For the assignments that I have had the honor to be a part of, I have worked directly with people on the team and have been able to make use of 'reach back' consultation with NRCS technical experts in the states.

**But there certainly are occasions when 'all eyes are on you' as you are making recommendations to improve food security or protect property and lives from flooding impacts.**

The statement that you made in the question 'all eyes on you' is a subtle but important one. I advise people who are new to this work to be very cautious about what they say. One is often looked to as having incredible insight and expertise by local people, but it is important to make sure that all assessments is collaborative with input by all stakeholders. I like the passages from a guide that T. E. Lawrence wrote for British officers in 1917, in which he advises "Do not try to do too much with your own hands. Better the Arabs do it tolerably than that you do it perfectly. It is their war,

and you are to help them, not to win it for them. Actually, also, under the very odd conditions of Arabia, your practical work will not be as good as, perhaps, you think it is." These words were delivered for a military situation. However, they are also very applicable to any aid or development effort where one is trying to apply a good technology or approach to a new area. Humility is important.

**You have also been requested to participate in bilateral policy meetings as a technical expert. Can you describe the meeting dynamics or how they might differ from a domestic meeting among agriculture stakeholders?**

Language and culture is always an issue. But it can be an issue in the United States as well. The lessons we learn regarding the importance of listening and working with people is as valid within the United States and outside. Having respect for their culture but remaining true to your own is important. In any of these efforts, volunteer or professional, it is important to remember that one is representing our country.

**Have you conducted any activities in the USA that were in support of international conservation?**

Yes. I have led instruction for several National Guard units prior to their deployment to Afghanistan. These units traveled to one of our National Centers in Fort Worth, TX, where I, as well as representatives from other centers, provided comprehensive training in a variety of soil and water conservation measures. As part of my volunteer efforts, I have



*The embankment slopes at recently constructed ponds in an undisclosed foreign country are very steep. Among the design concerns, Fripp identifies a safety hazard as steep slopes make it difficult for livestock or humans to climb out, if they fall in.*

*Photo courtesy of Jon Fripp, USDA NRCS*

*Following classroom instruction, Fripp provides hands-on training for students to practice stream bank restoration techniques. Aside from a basic knowledge transfer to improve technical skills, a recurring element of Fripp's work includes the 'train the trainer' approach; developing local trainers who can continue teaching in other parts of the country.*

*Photo courtesy of Jon Fripp, USDA NRCS*



also provided training in water testing, water disinfection, solar power, and irrigation to both religious and secular groups prior to their efforts in the developing world.

### **What advice would you give someone who is interested in becoming involved with international conservation?**

One has to have not only a skill set that is needed but a dedication to serve and a tolerance for things not going as planned. Working the developing world requires flexibility of thought, approach, and a sense of humility. Another quote that I like is from General David Petraeus, who spoke about the importance of listening, respect, and relationships. He said "A certain degree of intellectual humility is a good thing. There aren't always a hell of a lot of absolutely right answers out there." Also, consider volunteering. There are opportunities available through both secular and religious organizations to do good. This can be both domestically and abroad. Church groups as well as organizations such as Habitat for Humanity and Engineers Without Borders are great places to volunteer. For example, I have also worked through my church to produce over 1,300 drip irrigation

kits in the last decade that have been distributed around the world. Our estimate is that these serve to feed over 3,250 people.

### **Is there something you would recommend a traveler should take with them or something that you have found to be indispensable?**

A few things: An extra tooth brush, a power converter, a multitool Leatherman knife, my kindle (with books on local history and culture), comfortable boots, a hat, travelers sleeping bag (sometimes called a sleep sack), shower shoes, and a towel.

### **Have you run into any difficulties going through airport security or customs?**

The nature of my work often requires me to take a variety of equipment and supplies. These can range from multimeters for solar work to irrigation supplies to water quality test kits. Security personnel in any country are on the lookout for things that are out of the ordinary or suspicious. My equipment often fits both of those categories and they will pull me aside and ask for an explanation. Fortunately, once I explain the nature of the conservation mission and how I use the equipment, they are satisfied and pass me through the system. Being polite, calm,

and having a ready smile helps a lot. So far, my experiences with airport security has been good.

### **Looking back, what would you recall as a pivotal moment or aspect of your international conservation career?**

I would point to the people whom I have met and worked with both within the U.S. government and outside of government service. These include **William Doan, Larry Bentley, Phuc Vu, Melvin Westbrook, Lillian Woods Shawver, Linda Norgrove, Chris Hoag, Ginger Murphy, Clark Fleege, Michael Kucera, Matt Stellbauer, Bella Gordon, Hilary Landfried, Dan Lepinski, Cheryl Simmons, George Hernandez,** and the previously mentioned **Otto Gonzalez**. Their dedication and humanity has served as an inspiration to me.



## OTHER ACTIVITIES

### Argentina

NRCS North Dakota **Soil Health Specialist Jay Fuhrer** accepted an invitation to speak about the integration of cover crops and livestock into production systems, during the 7th World Congress on Conservation Agriculture, August 1-4, 2017, in Rosario, Argentina. Additionally, Fuhrer shared information regarding the four key soil health management principles the agency promotes, which are minimize disturbance, maximize soil cover, maximize biodiversity, and maximize the presence of living roots.

### Belgium

NRCS Iowa **Assistant State Conservationist Martin Adkins** accepted an invitation from the European Commission's Directorate General for Energy to speak at the 6th International Conference on Lignocellulosic Ethanol. The conference, with nearly 200 attendees from 38 countries, took place September 27-28, 2017, in Brussels, Belgium. Attendees from energy companies, environmental NGOs, academia, and governments

learned during Adkins' presentation about soil health and possible partnerships between public and private entities. Adkins was able to speak about a cooperative project he is involved with that demonstrates benefits for government and industry. "NRCS is supporting a joint project with a major U.S. science company that focuses on soil health protection in association with corn stover-based cellulosic ethanol production—an initiative that supports both renewable energy and soil health goals," explained Adkins. Additionally, the introduction of soil health management principles led to engaging conversations among the conference participants.

### Canada

NRCS Michigan **Water Quality Specialist Ruth Shaffer** traveled to Grand Bend, Ontario, Canada, October 23-24, 2017. Shaffer participated in the Lake Huron Lake Action and Management Plan (LAMP) meeting to contribute to the finalization of the document. Once approved, the LAMP will help U.S. and Canadian agencies

prioritize conservation efforts and activities of the shared lake. Shaffer also participated in a follow-up presentation at the Lake Huron-Georgian Bay Summit, held in Collingwood, Ontario, October 25-26, 2017.

### China

NRCS East National Technology Support Center **Botanist Mark Garland** participated in the Nomenclature Section of the 19th International Botanical Congress, July 17-21, in Shenzhen, China. Nearly 100 international taxonomy experts reviewed and voted on several proposals related to assigning of scientific names. Garland explained, "This meeting is where the rules of botanical nomenclature are set for the next six years. These rules are the directions that taxonomists follow to provide scientific names for fungi, algae, and plants." At NRCS, Garland also serves on the National Plant Data Team, which gathers and maintains information for the USDA PLANTS Database website. The information in PLANTS is widely used by many federal, state, and local agencies, as well as private organizations and agricultural producers.



*Following his earlier conference presentation, NRCS North Dakota Soil Health Specialist Jay Fuhrer (left) elaborates further on conservation planning during a spontaneous side discussion, August 2, 2017, at the 7th World Congress on Conservation Agriculture in Rosario, Argentina.*

*Photo courtesy of Jay Fuhrer, USDA NRCS*



On August 1, 2017, members of the NRCS Conservation Engineering Division met with a five-person Chinese delegation in Washington, DC. **Division Director Noller Herbert** and **National Civil Engineer David Thackeray** discussed concepts for the sustainable development of water resources with officials from the National Agro-tech Extension Service Center. China, like many countries, is facing extreme water shortages and is seeking information on suitable water management solutions, such as dry farming, reuse of agricultural water, and modern irrigation equipment. NRCS met with the Chinese researchers through participation in the bilateral U.S.-China Scientific Cooperation Exchange Program, which arranges for a series of visits in both countries each year.

NRCS Ecological Sciences Division **National Nutrient Management Specialist Dana Ashford-Kornburger** and **National Pest Management and Organic Systems Specialist Lindsay Haines** supported a request from the U.S. Grains Council to meet with three visiting officials from China's Ministry of Agriculture, November 7, 2017, in Washington, DC. During the engagement, information concerning NRCS conservation practices was shared, especially as they related to reducing the use of pesticides and fertilizers.

On November 20, 2017, NRCS Conservation Engineering **Division Director Noller Herbert**, **National Civil Engineer Dave Thackeray**, and **National Environmental Engineer Bill Reck** held presentations for an 18-person Chinese delegation in Washington, DC. The officials were primarily from China's Ministry of Agriculture and associated institutions. During the

meeting, NRCS briefed on agricultural waste disposal, pollution detection, and biofuels technology.

### *France*

NRCS Resource Economics and Analysis Division **Agricultural Economist Sophia Glenn** participated in meetings at the Organization for Economic Co-operation and Development (OECD) in Paris, France, October 23-27, 2017. The Joint Working Party for Agriculture and the Environment, as well as the Working Party on Biodiversity, Water and Ecosystems, provided a forum for government officials to discuss interdependencies of public policy and the environment. Officials from 35 member countries shared experiences to common challenges of economic development and sustainable agriculture. Presentations and discussions covered various topics, such as the environmental impact of agricultural regulations, comparing nitrogen management policies of several countries, or government responses to agricultural impacts on biodiversity. NRCS, as well as other USDA agencies, maintain vast amounts of scientific information that guide policy development in the USA and foreign countries. OECD members also utilize this data and information in their development, use and issuance of ongoing studies, reports, and datasets. Through science diplomacy, foreign governments are introduced to science-based and data-driven regulations and receive clarifications about their impacts. "Agency participation in the forum is pertinent to ensuring, accurate and appropriate use of the data and information, as well as to ensure proper interpretation and representation of U.S. policy and data throughout OECD

countries and around the world," explained Glenn. The peer review and cooperative approach of the forum facilitates valuable discussions and provides countries with opportunities to have policies and proposals examined and obtain feedback. Ultimately, these discussions encourage the development or adoption of favorable policies based on acceptable standards that will further benefit trade and the environment.

### *Indonesia*

NRCS Conservation Engineering Division **National Environmental Engineer Bill Reck** discussed energy policy and sustainability with a visiting delegation from Indonesia, August 1, 2017, in Washington, DC. The 10-person group consisted of various environmental experts who were interested in learning about policy and reducing greenhouse gas emissions. This engagement was coordinated in support of the U.S. State Department's International Visitor Leadership Program.

### *Japan*

NRCS Missouri **Assistant State Conservationist for Partnerships and Initiatives Karen Brinkman** supported a request from the U.S. Soybean Export Council and Missouri Soybeans to speak with a visiting delegation from Japan, September 12, 2017. Nine Japanese industry representatives received information related to conservation compliance and sustainability. The meeting was held at the NRCS State Office in Columbia, Missouri.

## *Kazakhstan*

NRCS Central National Technology Support Center Rangeland **Hydrologist Kenneth Spaeth**, along with colleagues from USDA's Agricultural Research Service, returned to Kazakhstan to continue their knowledge sharing efforts at Kazakh National Agrarian University. The USDA scientists traveled to the Central Asian country for a rangeland hydrology and soil erosion technology transfer, September 10-24 and December 2-9, 2017. During their September trip, the team provided training on resource inventory methods, data collection, and grazing management. Furthermore, the curriculum also included field training as the USDA team took a small group of students to four separate regions of Kazakhstan. This provided them with introductory training on field assessment methods required to facilitate the development of a resource inventory to assess rangeland health across Kazakhstan. Returning in December, the team provided instruction during a two day rangeland inventory and assessment seminar. Approximately 65 students received training on a variety of topics, such as ecological site descriptions, resource inventory, and soil survey. Additionally, the USDA team spoke at the Central Asian AGTECH Summit 2017, where they presented USDA technologies that contribute to the USDA rangeland program, such as the publically accessible [Web Soil Survey](#); a popular information system with soil maps, properties, and interpretations.



*NRCS Rangeland Hydrologist Kenneth Spaeth partnered with the USDA's Agricultural Research Service (ARS) to provide technical assistance during two trips to Kazakhstan, September and December 2017. **TOP:** Camels grazing on rangelands. **BOTTOM:** Spaeth reviewing methods of rangeland inventory with staff from Kazakh National Agrarian University.*

*Photos courtesy of Ken Spaeth, USDA NRCS*



## *Pakistan*

NRCS National Design, Construction, and Soil Mechanics Center **Civil Engineer Jon Fripp** and NRCS National Soil Survey Center **Agronomist Mike Kucera** returned to Pakistan to serve as technical leads for multi-year USAID-funded capacity building activities, August 20-25, 2017. Fripp supported the U.S.-Pakistan Water Dialogue, which aims to provide farmers with simple and practical water management techniques for use in irrigated and rain-fed areas. Kucera's involvement focused on the U.S.-Pakistan Soil Health and Fertility project. As the technical lead, Kucera provided guidance on educating service providers and farmers about soil health, soil fertility, and nutrient management. Aside from participating in meetings with Pakistani institutions, representatives from international organizations, and U.S. government interagency partners, both NRCS experts also provided water quality evaluation and testing training through a hands-on workshop. Thirty Pakistani scientists and agricultural service providers received classroom and field instruction to enhance their overall understanding and skills. Fripp also provided training on the Hydrologic Engineering Center River Analysis System (HECRAS), a modeling software developed by the U.S. Army Corps of Engineers. Among its many features, HECRAS allows users to study river stage and streamflow through simulations and incorporate the results into flood forecasting efforts. The workshop curriculum provided students the opportunity to learn about principles of water surface profile computations, participate in a computer exercise to set up a 1D steady flow model, and familiarize themselves with bridges and

culverts in 2D modeling, to name a few. Additionally, Kucera, along with Foreign Agricultural Service **International Program Specialist Hilary Landfried**, met with representatives from the Food and Agriculture Organization of the United Nations (FAO). At the meeting, FAO provided copies of the completed soil fertility atlases of the Punjab and Sindh provinces. Over the last few years, NRCS had recommended and contributed to this project as the publications will provide agricultural producers with vital information that can be utilized across the provinces. "The soil fertility atlases brought together efforts from fertilizer companies, provincial government, farmers, and others for use in improving fertilizer management strategies, soil fertility, and productivity," said Kucera.

## *Russia*

NRCS National Soil Survey Center **Research Soil Scientist Zamir Libohova** attended the GlobalSoilMap (GSM) Conference, July 4-6, 2017, in Moscow, Russia. More than 50 international scientists gathered at the People's Friendship University of Russia to discuss advances of the GSM project and developments in digital soil mapping. Additionally, the opportunity allowed stakeholders to define the new role of the GSM Consortium as it provides technical expertise in support of the Global Soil Partnership of the United Nations Food and Agriculture Organization.

## *IPD-hosted Webinar*

NRCS International Programs Division hosted a "What to Expect When Providing International Technical Assistance" webinar,

September 19, 2017. NRCS National Soil Survey Center **National Leader for Soil Interpretations Maxine Levin** served as the speaker and shared information on a variety of in-country do's and don'ts, such as proper dress, obtaining money in a cash-only economy, staying healthy, and use of a daily diary to document work activities. Levin has a wealth of relevant international experience, which also includes multi-month assignments in Rwanda and Southeast Asia (Thailand, Vietnam, Laos) as part of U.S. Embassy Science Fellowships. NRCS employees can view the webinar recording on the [IPD SharePoint Site](#).